

REMARKS

Entry of this amendment is respectfully requested.

The presently claimed invention is directed to a method for the selective separation of volatile flavorings from starting materials selected from fruit and vegetable juices and waters produced in fruit and vegetable processing, wherein said starting material is extracted with compressed C₂-C₄ hydrocarbons. Support can be found on page 6, lines 31-33 of the description.

Claims 1-20 were rejected under 35 U.S.C. §103(a) over Heidlas. Applicants respectfully traverse.

Heidlas (US 5,718,937) claims priority of German Patent DE 44 40 644 which is discussed in the present application on page 3, line 30 to page 4, line 8. Heidlas describes a process for extracting natural aromas from natural substances containing fat and oil with compressed gases, wherein, contrary to the method of the invention, the extraction is achieved in a two-step process. In the first step, the fats/oils are selectively removed with liquid propane and/or butane at a temperature of $\leq 70^{\circ}\text{C}$ and a pressure of < 500 bar. This step is, therefore, just a defatting and deoiling step, whereas the predominant portion of substances providing aroma remains in the initial material. The actual aroma extraction is carried out only subsequently in the second step of the process, whereby carbon dioxide is used in a near critical and supercritical state. Thus, for the actual extraction of aroma substances in the second step, Heidlas disclose compressed carbon dioxide as the extraction agent. There is no hint or suggestion to the use for the extraction of flavorings of other extraction agents than CO₂. Propane and butane are not specifically mentioned as suitable extraction agents for aroma substances.

Furthermore, as set forth in the specification at page 4, lines 48, it is shown that in the industrial implementation, the process described by Heidlas can only be conducted using solids and only in the case of natural materials, which comprise natural flavorings at high

concentration. Successful aroma extraction of liquids and those having low flavorings content is not possible using the two stage method according to Heidlas.

Moreover, the teaching of Heidlas even leads away from the subject matter of the present invention. In fact, fruit and vegetable juices and waters produced in fruit and vegetable processing contain practically no fats and oils, and, therefore, do not fall within the group of natural substances used as starting materials described by Heidlas. Since the first extraction step taught by Heidlas with liquid propane and/or butane serves only for the removal of fat or oil before the actual extraction of the volatile aroma substances, a skilled artisan would not have considered to use this two-step extraction, as a practical matter, on fat-and oil-free natural substances. Rather, with such substances, a skilled artisan would regard the first extraction step with liquid propane and/or butane as unnecessary and would omit it. According to the teaching of Heidlas the skilled artisan would, thus, solely carry out the steps of extracting of aroma substances with compressed carbon dioxide.

In view of the foregoing, the rejection should be withdrawn and the application should be allowed.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-0624, under Order No. NY-HUBR-1281-US. A duplicate copy of this paper is enclosed.

Respectfully submitted

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